UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,907	12/15/2005	Manousos Pattakos		5809

7590 10/19/2007

Pattakos Manousos
Lampraki 356
Nikea Piraeus, 18452
GREECE

EXAMINER	
CHANG, CHING	

ART UNIT	PAPER NUMBER
3748	

MAIL DATE	DELIVERY MODE
10/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,907	PATTAKOS, MANOUSOS	
	Examiner	Art Unit	
	Ching Chang	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-15 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 14 June 2005 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

- " contact surface (3) " on Page 3, line 1, should be -- contact surface (8) --.

Appropriate correction is required.

Drawings

2. Figure 25 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More specifically, " the members " in line 2 of claims 2, and 7 is lacking of antecedent basis, thus renders the claimed subject matter in claims 2, and 7 indefinite.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. ***Claims 1-7, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Bidlingmaier et al. (US Patent 6,145,485).***

Bidlingmaier discloses a variable valve gear comprising at least: a casing; a cam shaft (4); a control cam (3) mounted on said cam shaft; a valve (2); a valve actuator (5) for displacing said valve; a roller (7); a control shaft (39) rotatable about an axis of said casing; characterized in that: the roller couples the control cam and the valve actuator and the control shaft, the control cam displaces the roller, and the roller, supported on

the control shaft, displaces the valve actuator and the valve at a variable stroke depending on the angular displacement of the control shaft, thereby a simple, light, compact, precise, low friction, capable for high revs, easy to adjust and easy to control continuously variable valve lift system, with acceptably small valve clearance for all available valve lifts, can result; the roller is cylindrical or spherical or barrel shaped or in general is a solid of revolution or comprises solids of revolution; the roller is a free roller trapped among the control cam, the control shaft and the valve actuator; the roller is in direct contact to the control cam and to the control shaft and to the valve actuator; the roller is a roller bearing rolling directly on some or all of the aforementioned components it couples; the profile of the contact surface between the control shaft and the roller, and the profile of the contact surface between the valve actuator and the roller are properly selected to provide the desirable range of valve lifts with acceptably small valve clearance; the profile of the contact surface between the control shaft and the roller, and the profile of the contact surface between the valve actuator and the roller are properly selected to provide valve lifts from substantially zero to a maximum, with acceptably small valve clearance, thereby a throttless system can result, as well as a system for deactivating some cylinders; the profile of the contact surface between the control shaft and the roller, and the profile of the contact surface between the valve actuator and the roller are plane or cylindrical.

8. ***Claims 1-8, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Turner (GB '271).***

Turner discloses a variable valve gear comprising at least: a casing; a cam shaft (14); a control cam (13) mounted on said cam shaft; a valve (10); a valve actuator (16) for displacing said valve; a roller (18); a control shaft (28, 29) rotatable about an axis (of 21) of said casing; characterized in that: the roller couples the control cam and the valve actuator and the control shaft, the control cam displaces the roller, and the roller, supported on the control shaft, displaces the valve actuator and the valve at a variable stroke depending on the angular displacement of the control shaft, thereby a simple, light, compact, precise, low friction, capable for high revs, easy to adjust and easy to control continuously variable valve lift system, with acceptably small valve clearance for all available valve lifts, can result; the roller is cylindrical or spherical or barrel shaped or in general is a solid of revolution or comprises solids of revolution; the roller is a free roller trapped among the control cam, the control shaft and the valve actuator; the roller is in direct contact to the control cam and to the control shaft and to the valve actuator; the roller is a roller bearing rolling directly on some or all of the aforementioned components it couples; the axis of rotation of the control shaft and the axis of the roller are substantially offset to each other when, with the valve closed, the roller is in touch to the basic circle of the control cam, the roller is supported along a surface of the control shaft which comprises a lost motion initial part followed by an activation part, said lost motion initial part is substantially a surface of revolution with axis substantially coinciding the axis of rotation of the control shaft, there is a lever (15) swivelably coupled, at one end, to the valve actuator, and the lever holds, at its other end, the roller.

9. ***Claims 1-7, and 9-14 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Naumann (DE '612).***

Naumann discloses a variable valve gear comprising at least: a casing; a cam shaft (of 17; of 28; of 40); a control cam (17; 28; 40) mounted on said cam shaft; a valve (1; 19); a valve actuator (8; 20; 46) for displacing said valve; a roller (3; 21; 39); a control shaft (to hold 3; to hold 21; to hold 39) rotatable about an axis (of 4; of 25; of 43) of said casing; characterized in that: the roller couples the control cam and the valve actuator and the control shaft, the control cam displaces the roller, and the roller, supported on the control shaft, displaces the valve actuator and the valve at a variable stroke depending on the angular displacement of the control shaft, thereby a simple, light, compact, precise, low friction, capable for high revs, easy to adjust and easy to control continuously variable valve lift system, with acceptably small valve clearance for all available valve lifts, can result; the roller is cylindrical or spherical or barrel shaped or in general is a solid of revolution or comprises solids of revolution; the roller is a free roller trapped among the control cam, the control shaft and the valve actuator; the roller is only partially cylindrical or it is a fraction of a solid of revolution; the roller is in direct contact to the control cam and to the control shaft and to the valve actuator; the roller is a roller bearing rolling directly on some or all of the aforementioned components it couples; the rotation axis of the control shaft substantially coincides to the axis of the roller when, with the valve closed, the roller is in touch to the basic circle of the control cam, thereby a variable valve lift with substantially constant duration, timing and

clearance can result; the profile of the contact surface between the control shaft and the roller, and the profile of the contact surface between the valve actuator and the roller are properly selected to provide the desirable range of valve lifts with acceptably small valve clearance; the profile of the contact surface between the control shaft and the roller, and the profile of the contact surface between the valve actuator and the roller are properly selected to provide valve lifts from substantially zero to a maximum, with acceptably small valve clearance, thereby a throttless system can result, as well as a system for deactivating some cylinders; the profile of the contact surface between the control shaft and the roller, and the profile of the contact surface between the valve actuator and the roller are plane or cylindrical; the roller is displaced by said control cam indirectly, through a linkage (2), thereby a high precision system earl result, suitable for arrangements like the side cam engines.

10. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over the prior art of Fig. 25 in this instant application, because the Applicant has indicated " Fig 25 shows the application in case of side cam, based on the mechanism of the closest prior art. " (See Page 2 of the Specification), and " All arrangements proposed in the closest prior art can be modified similarly: in the present invention, the member mentioned in the closest prior art as the cam follower is displaced not directly by the cam lobe but indirectly through a lever or a linkage, as in Fig 25, where the version with the swivelably coupled levers of the closest prior art is applied on a side cam engine. "(See Page 4 of the Specification).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (571)272-4857. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571)272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CHING CHANG
PRIMARY EXAMINER
TECHNOLOGY CENTER 3700